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DEPARTMENT OF NATURAL RESOURCES

Division of Oil, Gas & Mining

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Division Director

Inspection Report Minerals Regulatory Program

Report Date November 29, 2005; Modified January 13, 2006

Supervisor

Mine Name: DKG Quarry
Operator Name: Diamond K Gypsum

Permit number: M/015/041
Inspection Date: November 22, 2005
Time: 11:00 AM to 12:20 PM

Inspector(s): Paul Baker
Other Participants: Clint Henry (Diamond K)
Mine Status: Active

Weather: Clear, 50's

Elements of Inspection	Evaluated	Comment	Enforcement
1. Permits, Revisions, Transfer, Bonds	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
2. Public Safety (shafts, adits, trash, signs, highwalls)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3. Protection of Drainages / Erosion Control	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
4. Deleterious Material	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5. Roads (maintenance, surfacing, dust control, safety)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6. Concurrent Reclamation	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7. Backfilling/Grading (trenches, pits, roads, highwalls, shafts, drill holes)	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
8. Water Impoundments	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
9. Soils	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
10. Revegetation	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
11. Air Quality	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
12. Other	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Purpose of Inspection:

The operator was in the process of reclaiming an area of about 4 or 5 acres and requested that I look at the site while equipment was still there to see if additional work would need to be done. We also needed to look at drainage control in the active mine area, and I wanted to see how vegetation was progressing in previously reclaimed areas.

Inspection Summary:

1. Permits, Revisions, Transfer, Bonds

On October 6, 2005, the Division approved an amendment allowing the operator to modify the access road. This change made it possible for the operator to reclaim a portion of the mine while making a slightly shorter haul distance out of the mine.

3. Protection of Drainages / Erosion Control

There is a natural drainage channel that begins about 100 yards above the area being reclaimed. This channel is blocked by the quarry, then there is a stretch that was not disturbed, then it is blocked again by the new road (Photo 3). This will create small impoundments when there is runoff, but this should not be a problem since the drainage area is small. It may enhance wildlife habitat since water is scarce in this area.

I asked the operator to slope the newly-regraded area so any runoff from this area would not flow into the drainage. Otherwise, it would increase the amount of water being ponded next to the road, and it might also create some erosion problems on the outslope of the quarry.

Photo 6 shows the boundary between the area being reclaimed and the active mine. The area being reclaimed is sloped so runoff from this area would go into the active mine which the operator does not want. The operator intends to build a berm across this boundary to divert runoff into a natural drainage channel.

The operator has had troubles with runoff from the active mine eroding the berms and the outslopes on the north side of the mine. This has added sediment to the runoff, but it has also caused problems for equipment operators. Mr. Henry proposed to use the rotomill to build a ditch along part of the north side of the quarry that would divert water to a catch basin (Photo 9). (The area shown in Photo 9 will need to be modified to make it more suitable as a pond.) The outlet from this pond would be placed so there would be as little drop as possible to the adjacent natural drainage channel.

There is already a depression at the lower end of the quarry that serves as a catch basin (Photo 10), and this appears to be large enough that it has not caused problems.

7. Backfilling and Grading

Photos 1 and 2 show a pile of waste material (mostly gypsum, it appears) that the operator will grade. This will mean disturbance of a slightly larger area.

The grading was not finished while I was at the site, but I was pleased with the work that had been completed. It blends well with surrounding areas, and most of the area has positive drainage. There was just one very small area where water would pond.

9. Soils

The soils in the area being reclaimed are fine textured and have very little rock, unlike the areas reclaimed in 2004. This concerns me because rocks tend to increase water infiltration and decrease runoff. There was an area with very gravelly soil on the southwest side of the area being reclaimed, and I suggested to Mr. Henry that, as far as possible, this could be spread over the top of the area being reclaimed.

Most of the area being graded still needed to be ripped. This needs to be done parallel to the contour. I am confident the operator well understands the concept of leaving the site rough.

10. Revegetation

Vegetation in the area that was graded and seeded in 2004 is progressing well. This area is shown in Photos 8 and 9. There is a nice mixture of grasses and shrubs. I cannot yet identify the grasses, but they did not look like Indian ricegrass. Most of the shrubs appear to be Castle Valley clover and fourwing saltbush, but when the shrubs are this small, I have trouble distinguishing between shadscale and Castle Valley clover.

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In the areas that had been previously graded and seeded that were reseeded last year, we found no shrubs. There is a moderate number of grasses, but this is a vast improvement in the amount of perennial vegetation.

On November 28, 2005, I received a copy of the tag for the seed that was used. The species used were those that were recommended and approved by the Division and the BLM with one exception. The label shows Gardner saltbush with an origin in Wyoming, but the mix the Division and the BLM agreed upon says "Castle Valley clover (Gardner saltbush)." Castle Valley clover is a variety of Gardner saltbush (*Atriplex gardneri* Var. *cuneata*) that grows in Utah, Colorado, and New Mexico but, according to *A Utah Flora*, does not grow in Wyoming. Therefore, the seed that was used is not likely to be Castle Valley clover.

The only variety of Gardner saltbush native to the area of the mine which also grows in Wyoming is Basin saltbush (*A. g.* Var. *tridentata*).

Conclusions and Recommendations:

I suggest that the operator install a notched silt fence to serve as the outlet for the upper catch basin. This would need to be keyed in to the embankment so it doesn't wash out.

The operator should contact the seed dealer to determine what variety of Gardner saltbush was used in the seed mix. If the operator specified Castle Valley clover when ordering the seed, the dealer should have supplied Castle Valley clover unless the operator approved a change.

I am concerned about the variety used in reclamation because it appears Castle Valley clover has been very successful in the area seeded in 2004 and because some species must have only very specific conditions. If the plants that were the source of this seed are not adapted to this site, there may be few that will become established.

Other recommendations are given in the text above.

Inspector's Signature

Date: January 13, 2006

PBB:jb

cc: Karen Palmer, Diamond K
Rebecca Doolittle, Price BLM
Attachment: Photos

ATTACHMENT
Photographs

M/015/041, DKG Quarry, Diamond K Gypsum

Inspection Dated: November 22, 2005; Report Dated: November 23, 2005; Report Modified January 5, 2006

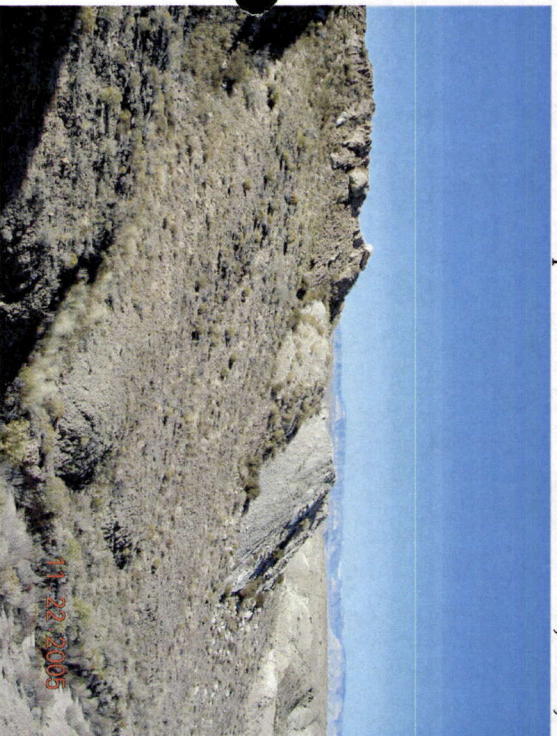


Photo 1. The operator will try to knock down the pile of waste material in the center-right of this photo and cover it with soil.

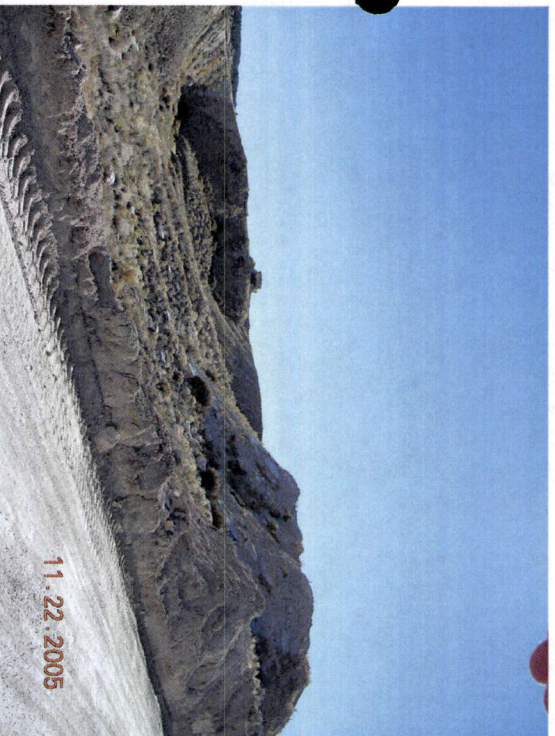


Photo 2. Another view of the waste material shown in Photo 1.



Photo 3. This mound is a rock outcrop that looks natural from this angle but not from the other side. This outcrop will be left.

The drainage near the center of this photo is blocked by the road in the foreground and also by the regraded mine. This drainage looks larger than it is; it only extends about 100 yards above the reclaimed area.



Photo 4. Gravel that the operator is going to try to spread over some of the reclaimed surface.



Photo 5. A portion of the reclaimed area. This still needs to be ripped and seeded.

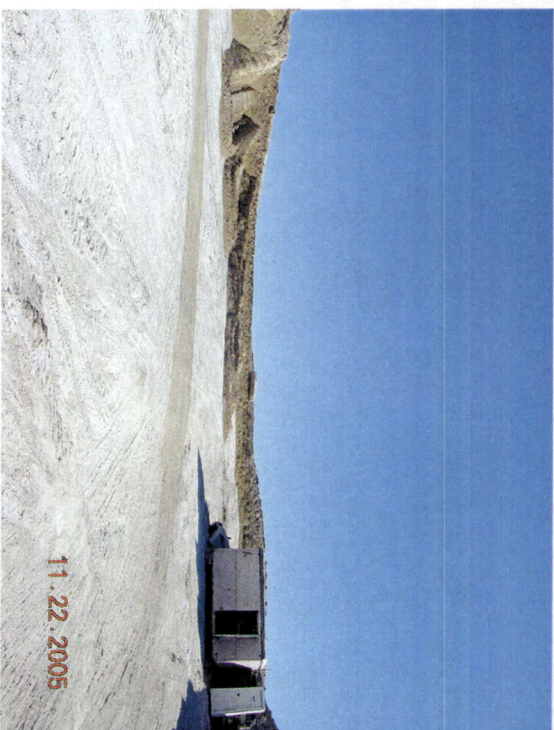


Photo 6. This shows the boundary between the area being reclaimed and the active mine. Runoff from the reclaimed area would flow on to the active mine area, but the operator intends to build a berm to divert this water to a natural drainage.



Photo 7. Vegetation in the area reclaimed in 2004.



Photo 8. An overview of some of the area reclaimed in 2004.

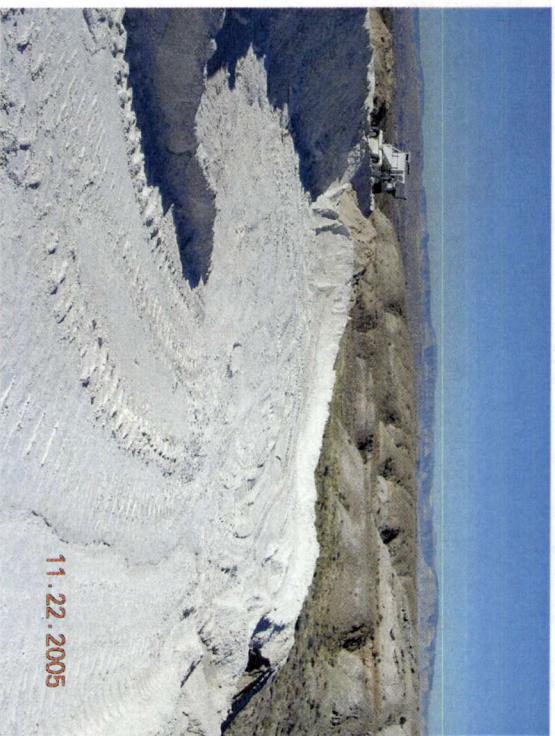


Photo 9. The operator intends to construct a small pond in this area to hold runoff from the upper part of the active mine.



Photo 10. A depression in the lower portion of the active mine.